Introduction to CHSII Hardware
31U3E2L1 / Version 1
05 Jun 2003

SECTION I. **ADMINISTRATIVE DATA**

All Courses Including This Lesson	Course Number	Version	Course Title
	101-31U30	TATS	Signal Support Systems Specialist BNCOC

Task(s) Taught(*) or Supported	Task Number	Task Title
		INDIVIDUAL
	113-580-7002 (*)	Restore Tactical Automated Information Systems
	113-580-7126 (*)	Direct Implementation of a Tactical Local Area Network (TACLAN)
	113-623-7196 (*)	Perform Quality Control on Unit Level Maintenance (ULM) of Assigned Signal Equipment

Reinforced Task(s)	Task Number	Task Title

Academic Hours

The academic hours required to teach this lesson are as follows:

	Resident Hours/Methods	
	5 mins	/ Conference / Discussion
	3 hrs 45 mins	/ Conference/Demonstration
Test	0 hrs	
Test Review	0 hrs	
Total Hours:	4 hrs	

Test Lesson Number

	Hours	Lesson No.
Testing (to include test review)		N/A

Prerequisite Lesson(s)	Lesson Number	Lesson Title
	None	

Clearance Access

Security Level: Unclassified
Requirements: There are no clearance or access requirements for the lesson.

Foreign Disclosure Restrictions

FD8. This product/publication has been reviewed by the product developers in coordination with the USASC&FG foreign disclosure authority. This product must be sanitized prior to release to students from foreign countries. See the USASC&FG foreign disclosure authority for sanitization guidelines.

References

Number	Title	Date	Additional Information
MCS-U1-1000	Software user's manual for MCS	12 Jul 2001	
QUICK REFERENCE GUIDE	Quick Reference Guide for Heavy Version 6.3.3.2(P2)	01 Sep 2002	
QUICK REFERENCE GUIDE2	Quick Reference Guide for Light (MCS)	09 Jul 2001	
TM 11-7010-266-12P	Operator and Unit Maintenance Manual (Including Repair Parts and Special Tools list) Maneuver Control System (MCS) Computer System, Digital AN/TYQ-45A (NSN: 7021-01-472-3607)	01 Jan 2001	
TM 11-7010-331-12P	Operator and Unit Maintenance Manual (Including Repair Parts and Special Tools list) Maneuver Control System (MCS) Computer System, Digital AN/PYQ-6 (NSN: 7010-01-443-2309)	01 Jan 2001	

Student Study Assignments

None

Instructor Requirements

One (1) Qualified Instructor
One (1) Assistant Instructor

Additional Support Personnel Requirements

Name	Stu Ratio	Qty	Man Hours
None			

Equipment Required for Instruction

Id Name	Stu Ratio	Instr Ratio	Spt	Qty	Exp
*673-00-753-5235 SCREEN	1:16		No	0	No
*7010-00-T02-6973 Computer, IBM PC	1:1		No	0	No
*7025-01-502-7500 MONITOR, ZENITH COMPUTER	1:16		Yes	0	No
G02400 Industry Standard Hub	1:16		Yes	0	No
G07020 Industry Standard Professional Computer	1:1		Yes	0	No
*PJ0025 Projector, LCD			No	0	No

* Before Id indicates a TADSS

Materials Required

Instructor Materials:
Industry Standard Professional Computer

2

Projector, LCD
PowerPoint Slides
TM 11-7010-266-12&P
TM 11-7010-331-12&P

Student Materials:
Industry Standard Professional Computer
TM 11-7010-266-12&P
TM 11-7010-331-12&P

Classroom, Training Area, and Range Requirements	CLASSROOM, GEN PURPOSE, 1500SF, 20PN				

Ammunition Requirements	**Id**	**Name**	**Exp**	**Stu Ratio**	**Instr Ratio**	**Spt Qty**
	None					

Instructional Guidance

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

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Proponent Lesson Plan Approvals

Name	Rank	Position	Date
FRANK, MITCHELL	GS-12	Chief, Training Developer	05 Jun 2003

SECTION II.   **INTRODUCTION**

> Method of Instruction: Conference / Discussion
> Instructor to Student Ratio is: 1:16
> Time of Instruction: 5 mins
> Media: Small Group Instruction (SGI)

Motivator

Because of the ever growing technology of today, the use of advance technology will provide a more durable and reliable computer system that will allow soldiers at all levels to process, display, and transmit information.

Terminal Learning Objective

NOTE: Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Introduction to AN/PYQ-6 and AN/TYQ-45A, Common Hardware / Software Version II, (CHS II).
Conditions:	In a classroom environment with appropriate materials.
Standards:	Standards are met when students can Identify components of the AN/PYQ-6 and the AN/TYQ-45A CHS II System.

Safety Requirements

The student will be reminded of the Army Safety Program and its relationship to their conduct and performance at all times.

Risk Assessment Level

Low

Environmental Considerations

NOTE: It is the responsibility of all soldiers and DA civilians to protect the environment from damage.

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Evaluation

Instructional Lead-In

(Slide 1)   Introduction to Common Hardware Systems (CHS-2).

The concept of Force XXI is bringing together advance technology and soldiers at all levels with the use of tactical computer systems. Thus, providing better communications, planning and coordinating, and unit tracking during peace and wartime.

4

SECTION III.   PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A.   ENABLING LEARNING OBJECTIVE

ACTION:	Introduction to Common Hardware / Software, Version II
CONDITIONS:	In a classroom Enviroment given a computer and slide presentation
STANDARDS:	Understand the purposeand components of the AN/PYQ-6 and the AN/TYQ-45A CHS II Systems.

1.   Learning Step / Activity 1. Introduction to AN/PYQ-6 and AN/TYQ-45A (CHS II)

Method of Instruction: Conference/Demonstration
Instructor to Student Ratio: 1:16
Time of Instruction: 3 hrs 45 mins
Media: Small Group Instruction (SGI)

There are two types of the Common Hardware System, they are CHS II Heavy and CHS II Light. (Slide 1)
(Slide 2)

First we will start with CHS II Light.

1-1 SCOPE
1-3.1 Type of Manual. PG 1-1   **TM 11-7010-331-12&P**

This is an Operator/Maintainer Technical Manual (TM), that includes a Repair Parts and Special Tools List (RPSTL). This type of TM provides instructions and procedures for setup, operation, tear down, maintenance, and repair of the Computer System, Digital AN/PYQ-6 system. Hereafter, the portion of the MCS system covered in this manual will be referred to as the AN/PYQ-6.

(Slide 3)
1-3.2 Model Number and Equipment Name. PG 1-1 **TM 11-7010-331-12&P**

The AN/PYQ-6 (figure 1-1) Common Hardware Software version 2 (CHS II) components consists of:
1. NCU-R
2. AC to DC Adapter
3. Battery Charger
4. Battery Pack
5. Floppy Disk Drive (FDD) cable
6. CD-ROM Drive
7. Floppy Disk Drive (Installed)
8. Xircom3 PC Card
9. Soft Carrying Case

 (Slide 4)
1-3.3 Purpose of Equipment. PG 1-1 **TM 11-7010-331-12&P**

5

The AN/PYQ-6 is a Common Hardware Software (CHS) item that is integrated with MCS Battlefield Functional Area (BFA) -specific application software, and communications hardware to form part of the MCS System. The MCS System utilizes various configurations tactical Command, Control, Communications, Computers, and Intelligence (C4I) equipment for its missions.

(Slide 5)
1-3.4 Special Feature.   PG 1-1 **TM 11-7010-331-12&P**

The AN/PYQ-6 is a rugged laptop computer system, which affords maximum flexibility to the highly mobile user. The main component of theAN/PYQ-6 system is the Notebook Computer Unit – Rugged (NCU-R). AN/PYQ-6 is the official nomenclature for the CHS-2 version of the Panasonic CF-71 Toughbook.

INSTRUCTOR NOTE: Ensure students understand that this is a chart where they can reference new terminology used in this TM.

(Slide 6)
1-6 OFFICIAL NAMES, COMMON NAMES, AND ACRONYMS PG 1-3 **TM 11-7010-331-12&P**

Common names and acronyms are used in this manual to make procedures easier for you to
read. A cross-reference between the official names, common names, and acronyms is listed.
Cross-Reference List
Official Name Common Name Acronym
13.3" TFT SVGA Screen Display
Adapter Connector AC adapter
Additional Authorizations List AAL AAL
Advanced Configuration and Power Interface ACPI
Alternating Current AC AC
AN/PYQ-6 System
Army Tactical Command and Control System ATCCS
Assembly ASSY
Basis of Issue BOI
Battery Power Supply Battery Pack
Battlefield Functional Area BFA
Command, Control, Communications, Computers, and Intelligence
C4I C4I
Commercial and Government Entity Code CAGEC
Common Hardware and Software CHS
Common Hardware and Software Version 2 CHS-2
Compact Disk – Read Only Memory CD-ROM
Components of End Item COEI
Direct Current DC DC
Direct Support DS
Equipment Improvement Recommendation EIR
Equipment Serviceability Criteria ESC ESC
Extended Data Out EDO
Federal Supply Class FSC
Figure FIG
Floppy Disk Drive FDD FDD
General Support GS

6

Local Area Network LAN LAN
Maintenance Allocation Chart MAC
Maintenance Plan MP
Maneuver Control System MCS
Modification Work Order MWO MWO
National Item Identification Number NIIN
National Stock Number NSN
Not Mission Capable NMC
Organizational ORG
TM 11-7010-331-12&P
Cross-Reference List (continued)
Official Name Common Name Acronym
Personal Computer Memory Card International Association PCMCIA
Preventive Maintenance Checks and Services PMCS PMCS
Regional Support Center RSC
Removable Hard Disk Drive Hard Drive RHDD
Repair Parts and Special Tools List RPSTL RPSTL
Repair Parts and Special Tools List RPSTL
Report of Discrepancy ROD ROD
Source, Maintenance, & Recoverability SMR
Special SPEC
Specialized Repair Activity SRA
Standard Operating Procedure SOP
Standardized Integrated Command Post System SICPS
Super Video Graphics Adapter SVGA
Test, Measurement, & Diagnostic Equipment TMDE
Thin Film Transistor (LCD display type) TFT
Usable On Code UOC
V1 Notebook Computer Unit – Rugged Computer NCU-R
Volts Alternating Current VAC
Volts Direct Current VDC
Zircom3 RealPort™ Integrated PC Card LAN Connector

(Slide 7)
1-11 SECURITY MEASURES FOR ELECTRONIC DATA
Security measures described in AR 380-19 shall be followed to control access to
classified electronic data. Procedures described in your Unit's System Security
Standing Operating Procedures (SOP) shall be followed when electronic media are
removed.

NOTE: Conduct a check on learning and summarize the learning activity.

2.   Learning Step / Activity 2. AN/PYQ-6 Equipment Description and Data

                   Method of Instruction: Conference / Discussion
           Instructor to Student Ratio: 1:16
                   Time of Instruction: 0 hrs
                                 Media: Small Group Instruction (SGI)

SECTION III EQUIPMENT DESCRIPTION AND DATA PG 1-7 **TM 11-7010-331-12&P**

(Slide 8)
1-12 EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The AN/PYQ-6 is a notebook computer that operates with Windows NT and MCS Light application software. It supports various configurations and installation layouts for C4I operations. The AN/PYQ-6 operates with the MCS Light application system, and is reliant on connectivity with the system operating the MCS Heavy application software.

(Slide 9)
1-13 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. PG 1-7 **TM 11-7010-331-12&P**

The AN/PYQ-6 hardware is listed below and described in the following table:
- Computer/Display
- CPU........................600 MHz Pentium Processor w/ MMX, 256 KB L2 cache
- RAM........................ 256 MB EDO RAM
- Mass Storage.......... Internal 12GB HDD (standard)
                             Removable 3.5" 1.44 MB Floppy Drive (standard)
                             Removable 24X CD-ROM
- Keyboard................ Full size 87 key w/ touchpad
- Display................... 13/3 Color Active Matrix TFT – 1024 x 768 SVGA
                             resolution
- PC-Cards............... For the MCS application a Xircom3 RealPort™
                             Integrated PC Card is in the PC Card slot. This fills
                             the slot and no other PC Cards are used.

1-14 EQUIPMENT DATA. PG 1-8 **TM 11-7010-331-12&P**

NOTE
Operating temperature for all electrical components is 32° to 120° F unless otherwise noted.
Storage temperature is -25° to 150° F.

(Slide 10)
a. NCU-R. PG 1-8 **TM 11-7010-331-12&P**

Dimensions: Deployed........................ 9.5" D x 11.7" W x 10.5" H
                        Stowed........................... 9.5" D x 11.7" W x 1.7" H
Weight...6.4 lbs.
Current Requirements
AC Adapter.. 110-240 VAC, 50/60 Hz
                                                         Autosensing/Switching DC
Battery... 4500 mAh, 10.8V Lithium Ion
                                                         Operating time: 3-5 hours.
                                                         (depending on conditions)
                                                         Charging time:
                                                         Power-on: approximately 5 hours
                                                         Power-off: approximately 2.5 hours
Temperature: Operating..................... 0° F to 120° F
                        Stowed.........................-25° F to 150° F

(Slide 10)
b. AC to DC Adapter   PG 1-8 **TM 11-7010-331-12&P**

Input 100 – 240 VAC, 50 / 60 Hz
Output 15/6 VDC, 3.85A

8

(Slide 10)
c. Battery Charger PG1-9 **TM 11-7010-331-12&P**

Dimensions 3.5" D x 1.8" H x 3.5" W
Weight 5 oz
Input Voltage 15.1 VDC
Current Capacity 2.6 A
Temperature 41°F to 95 °F

(Slide 10)
d. Battery Pack PG 1-9 **TM 11-7010-331-12&P**

Type Lithium Ion 10.8V, 3300 mAh
Operating Time Approximately 3.0 hours*
Charging Time Power On Approx. 4.5 hours*
Power Off Approx. 2.5 hours*
* Varies depending on the usage conditions

(Slide 11)
e. Floppy Disk Drive PG 1-9 **TM 11-7010-331-12&P**

Your computer comes with this drive installed, it can be removed from the Multimedia
Pocket and used externally. This requires the Floppy Disk Drive Cable (below).

(Slide 11)
f. **Floppy Disk Drive Cable** PG 1-9 **TM 11-7010-331-12&P**

Purpose: Allows you to use the FDD as an external drive that is connected
through the parallel port

(Slide 11)
g. CD-ROM Drive PG 1-9 **TM 11-7010-331-12&P**

24X Usable in the multimedia pocket when floppy disk drive has been removed
TM 11-7010-331-12&P

(Slide 11)
h. Xircom3 PC Card PG 1-10 **TM 11-7010-331-12&P**
Bus Type CardBus (32-bit)
Ethernet Speed 10 Mbps Half/Full Duplex
100 Mbps Half/Full Duplex
Modem Speed/Features 56K, V.90, K56Flex, Digital Shield
Power Management 3-Volt, BatterySave, ACPI
Purpose Provides LAN connection

(Slide 11)
i. Soft Carry Case PG 1-10 **TM 11-7010-331-12&P**
Purpose: Fabric Transit Case. Provides
storage for computer and
peripherals. Stowage during
transport shall be according to
your Unit's SOP

(Slide 12)
SECTION IV PRINCIPLES OF OPERATION PG 1-11 **TM 11-7010-331-12&P**
1-15 GENERAL.
The AN/PYQ-6 is a rugged notebook computer designed to receive, process, display, and transmit Command, Control, Communications, Computers, and Intelligence (C4I) information for the Maneuver Control System (MCS).

(Slide 12)
1-16 SYSTEM FUNCTIONAL DESCRIPTIONS <u>SHOW SLIDE 10</u> PG 1-11 **TM 11-7010-331-12&P**
The AN/PYQ-6 is a self-contained computer that utilizes the Windows NT operating system to run MCS Light software. This rugged, highly mobile system can be deployed to and recovered from almost any location very quickly, increasing the warfighter's mobility and survivability.
Internal batteries or power from an external source can be used. The required connection to the AN/TYQ-45A for necessary database information can be established using Local Area Network (LAN) or tactical radio as shown below.
* <u>Not part of the AN/PYQ-6</u> PG 1-11 **TM 11-7010-331-12&P**

FIGURE 1-2 AN/PYQ-6 CONNECTIONS

NOTE: Conduct a check on learning and summarize the learning activity.

3.   Learning Step / Activity 3. AN/PYQ-6 Operating Instructions

                        Method of Instruction: Conference / Discussion
                           Time of Instruction: 0 hrs
                                       Media: -None-

OPERATING INSTRUCTIONS PG. 2-1 **TM 11-7010-331-12&P**

(Slide 13)
NCU-R (Front, Left View)   PG 2-0 **TM 11-7010-331-12&P**

2-1 OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS
Refer to chart on PG 2-1, OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS

(Slide 14)
NCU-R (Front, Right View)   PG 2-2 **TM 11-7010-331-12&P**

2-2 OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS (cont.)
Refer to chart on PG 2-3, OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS

(Slide 15)
NCU-R (Rear Panel)   PG 2-4 **TM 11-7010-331-12&P**

2-2 OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS (cont.)
Refer to chart on PG 2-4, NCU-R Rear Panel

NOTE: Conduct a check on learning and summarize the learning activity.

4.	Learning Step / Activity 4. AN/TYQ-45A Equipment Description and Data

<pre>
              Method of Instruction: Conference / Discussion
           Instructor to Student Ratio: 1:16
                Time of Instruction: 0 hrs
                             Media: Small Group Instruction (SGI)
</pre>

(Slide 16)

CHS II Heavy ANTYQ-45A   TM 11-7010-266-12&P

1-1 SCOPE
Type of Manual. TM 11-7010-266-12&P PG 1-1
This is an Operator/Maintainer Technical Manual (TM), that includes a Repair Parts and Special
Tools List (RPSTL). This type of TM provides instructions and procedures for setup, operation, tear
down, maintenance, and repair of the AN/TYQ-45A. Hereafter, the portion of the MCS system
covered in this manual will be referred to as the AN/TYQ-45A.

(Slide 17)

Model Number and Equipment Name.
The AN/TYQ-45A Common Hardware Software version 2 (CHS-2) consists of:
1. Computer, Digital, Versatile Computer Unit (VCU-2)
2. Color Flat Panel Display (CFPD)
3. Keyboard (KBD)
4. Removable Hard Disk Drive (RHDD)

(Slide 18)

Purpose of Equipment.
The AN/TYQ-45A is Common Hardware Software (CHS) items that are integrated with MCS
Battlefield Functional Area (BFA) specific application software to form part of the MCS system. The
MCS system utilizes various configurations of tactical Command, Control, Communications,
Computers, and Intelligence (C4I) equipment for its mission.

(Slide 18)

Special Feature.
The system can be quickly and easily deployed and recovered making it very mobile.

(Slide 19)

1-6 OFFICIAL NAMES, COMMON NAMES AND ACRONYMS PG 1-3
Common names and Acronyms are used in this manual to make procedures easier
for you to read. A cross-reference between the official names, common names and
acronyms is listed below.
Cross-Reference List
Official Name Common Name Acronym
Army Tactical Command and Control System ATCCS

11

Battlefield Functional Area BFA
Compact Disk – Read Only Memory CD-ROM
Color Flat Panel Display Display CFPD
Command, Control, Communications, Computers, and Intelligence C4I
Common Hardware and Software CHS
Common Hardware and Software Version 2 CHS-2
Equipment Improvement Recommendation EIR
Floppy Disk Drive FDD
JAZ Drive Zip Drive
Keyboard Keyboard KBD
Large Format Printer Printer/Plotter LFP
Lightweight Laser Printer Printer LLP
Line Replaceable Unit LRU
Local Area Network LAN LAN
Maneuver Control System MCS
Network Attached Server Server NAS
Not Mission Capable NMC
Personal Computer Memory Card International Association PCMCIA
Redundant Array of Independent Disks Raid RAID
Regional Support Center RSC
Removable Hard Disk Drive Hard Drive RHDD
Standard Operating Procedure SOP
Standardized Integrated Command Post System SICPS
Surface Wire Grounding System SWGS
Volts Alternating Current VAC
Volts Direct Current VDC
Versatile Computer Unit VCU-2

(Slide 20)

1-11 SECURITY MEASURES FOR ELECTRONIC DATA PG 1-4
Security measures described in AR 380-19 shall be followed to control access to
classified electronic data. Procedures described in System Security Standing
Operating Procedures (SOP) shall be followed when electronic media are removed
from the VCU-2.

SECTION II EQUIPMENT DESCRIPTION AND DATA PG 1-5

(Slide 21)

1-12 EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES PG 1-5
TM 11-7010-266-12&P
The AN/TYQ-45A is a transportable system consisting of CHS equipment that
operates on both common and applications software. It support various configurations
and installation layouts for C3I operations.

(Slide 22)

1-13 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.
<u>AN/TYQ-45A</u>
The AN/TYQ-45A hardware is described in the following paragraphs:

VERSATILE COMPUTER UNIT (VCU-2). PG 1-5
The VCU-2 includes a Removable Hard Disk Drive (RHDD) slot, an integral JAZ
Drive, a Type III

12

PCMCIA socket (one rear), internal LAN card, ThinLAN assembly, a Compact Disk-Read Only
Memory Drive (CD-ROM), a 3.5-inch Flexible Disk Drive (FDD). The VCU-2 contains an RJ45
connection for LAN.

KEYBOARD WITH POINTING DEVICE (KBD).
The keyboard is used for data entry and operation of the system. The alpha, numeric, and cursor
keys are used to enter text and numbers into the system. The pointing device is used to move
cursor on display screen and make selections like a mouse. NUM LOCK activates the alt keys
for the numeric keypad.

REMOVABLE HARD DISK DRIVE (RHDD). FRONT AND REAR VIEW. PG 2-12
The RHDD is a 2.5", removable hard disk drive that stores the operating system and application
software.

COLOR FLAT PANEL DISPLAY (CFPD) (cont.) FRONT VIEW. PG 2-8
The display, more commonly known as a CFPD, is an 18-inch Flat Panel Display. It is connected
to the VCU-2 using a video-power cable and a signal cable. The CFPD provides a keyboard
connector.

(Slide 23)
1-14 EQUIPMENT DATA

a. Versatile Computer Unit (VCU-2). PG 1-6
Dimensions... 14.3" D x 17.38 W x 8.72" H
Weight .... 25.0 lbs (CPU Only)
AC Power .... Auto-sensing 90 – 264 VAC
at 47 – 66 Hz
DC Power .... 22 – 33 VDC
Power Consumption .... 300 W Max
Internal UPS .... Lithium Ion battery back-up
Operating Temperature 0 to 120° F
Storage Tempereature -25 to 150° F
Humidity 10 to 95% (mist and fog)
Altitude 15,000 ft operating; 40,000 ft non-operating

b. Keyboard (KBD). PG 1-6
Dimensions... 9.00" D x 14.5" W x 1.8" H
Weight .... 3.5 lbs
Operating Temperature .... 0 to 120° F

(Slide 24)

c. Removable Hard Disk Drive (RHDD). PG 1-6
Dimensions... 5.70" D x 3.60" W x 0.90" H
Weight .... 1.5 lbs
Voltage Requirements.. 75 Vac
Current Requirements .... 1.0 A Max

Power Consumption .... 55 W
Operating Temperature 0 to 120° F

d. 18 inch-Color Flat Panel Display (CFPD). PG 1-6
Dimensions.. 6.1" D x 14.5" W x 18.4" H
Weight .... 25 lbs
Current Requirements .... 2.6 A
Power Consumption .... 300 W
Operating Temperature .... 0 to 120° F

(Slide 25)

SECTION III PRINCIPLES OF OPERATIONS PG 1-7
1-15 GENERAL.
The AN/TYQ-45A is designed to receive, process, display, and transmit military Command, Control, Communications, COmputers, and Intelligence (C4I) information for MCS.

GROUNDING

POWER
A trailer mounted generator or commercial power source can provide power to the AN/TYQ-45A.

(Slide 26)

1-16 SYSTEM FUNCTIONAL DESCRIPTIONS

NOTE: Conduct a check on learning and summarize the learning activity.

5.   Learning Step / Activity 5. AN/TYQ-45A Operating Instructions

                    Method of Instruction: Conference / Discussion
          Instructor to Student Ratio: 1:16
                    Time of Instruction: 0 hrs
                                  Media: Small Group Instruction (SGI)

(Slide 27)

OPERATING INSTRUCTIONS

SECTION 1 DESCRIPTION AND USE OF OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS PG 2-1

2-1 OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS

VCU-2 FRONT PANEL
PG 2-2 **Operator's Controls, Indicators, and Connectors (cont.)**
CHART LOCATED ON PG 2-3

(Slide 28)

VCU-2 REAR PANEL (Dust Covers Removed)

PG 2-4 **Operator's Controls, Indicators, and Connectors (cont.)**
CHART LOCATED ON PG 2-5

(Slide 29)

KEYBOARD WITH POINTING DEVICE (KBD).
PG 2-6 **Operator's Controls, Indicators, and Connectors (cont.)**
The VCU keyboard is used for data entry and operation of the system. The alpha numeric and cursor
keys are used to enter text and numbers into the system. Functions of some keys may vary depending on the application software being run. The cursor control keys are used to place the cursor in a specific position on the display screen. Num Lock activates the alt keys for the numeric pad.
CHART LOCATED ON PG 2-7 (Not on slide)

(Slide 30)
PG 2-8 **Operator's Controls, Indicators, and Connectors (cont.)**
COLOR FLAT PANEL DISPLAY (CFPD).
The display, more commonly known as a CFPD, is an 18-inch Flat Panel Display. It is connected
to the VCU-2 using a video-power cable and a signal cable. The CFPD provides a keyboard
connector.

(Slide 31)
PG 2-8 **Operator's Controls, Indicators, and Connectors (cont.)**
COLOR FLAT PANEL DISPLAY (CFPD) (cont.) FRONT VIEW.
The display, more commonly known as a CFPD, is an 18-inch Flat Panel Display. It is connected
to the VCU-2 using a video-power cable and a signal cable. The CFPD provides a keyboard
connector.
CHART LOCATED ON PG 2-9

(Slide 32)
PG 2-10 & 2-11 **Operator's Controls, Indicators, and Connectors (cont.)**
COLOR FLAT PANEL DISPLAY (CFPD) (cont.) REAR VIEW.
CHART LOCATED ON PG 2-11

(Slide 33)
PG 2-12 **Operator's Controls, Indicators, and Connectors (cont.)**
REMOVABLE HARD DISK DRIVE (RHDD). FRONT AND REAR VIEW.
The RHDD is a 2.5", removable hard disk drive that stores the operating system and application
software.
CHART LOCATED ON PG 2-12

(Slide 34)

Questions / Review

 NOTE: Conduct a check on learning and summarize the learning activity.

 CHECK ON LEARNING: Conduct a check on learning and summarize the ELO.

15

B.   ENABLING LEARNING OBJECTIVE

ACTION:	113-623-7196 / Perform Quality Control on Unit Level Maintenance (ULM) of Assigned Signal Equipment
CONDITIONS:	Given an SICPS with associated communications equipment; Excess Management Report; Service Schedule Due Report; PLL Inventory Report; AR 25-30, AR 710-2, DA PAM 738-750, TM 11-7010-256-12&P for the tracked command post (M1068) version, TM 11-7010-258-12&P for the STCP version, TM 11-7010-260-12&P for the RWS version, or the applicable technical manuals for other signal equipment; DA Form 5986-E, and DA Form 5988-E.
STANDARDS:	Documented and corrected all discrepancies in ULM documentation and performance procedures; or the equipment without faults passed the self-test.

1.   Learning Step / Activity 1. Obtain and inspect the managers' reports from the ULLS clerk. (Refer to DA PAM 738-750.)

Method of Instruction: Conference / Discussion
Time of Instruction: 0 hrs
Media: -None-

 a. Inspect the Excess Management Report.
 b. Inspect the Service Schedule Due Report.
 c. Inspect the PLL Inventory Report.

 NOTE: Conduct a check on learning and summarize the learning activity.

2.   Learning Step / Activity 2. Check ULM results to verify any discrepancies. (Refer to applicable equipment technical manuals.)

Method of Instruction: Conference / Discussion
Time of Instruction: 0 hrs
Media: -None-

 a. Inspect the equipment for operator's PMCS.
 b. Inspect the equipment for ULM checks and services.

 NOTE: Conduct a check on learning and summarize the learning activity.

3.   Learning Step / Activity 3. Take corrective actions. (Refer to AR 25-30, AR 710-2, and DA PAM 738-750.)

Method of Instruction: Conference / Discussion
Time of Instruction: 0 hrs
Media: -None-

 a. List all the faults noted during the inspection.
 b. Resolve any training issues.
 c. Verify corrective actions.

NOTE: Conduct a check on learning and summarize the learning activity.

4. Learning Step / Activity 4. Schedule next maintenance inspection.

Method of Instruction: Conference / Discussion
Time of Instruction: 0 hrs
Media: -None-

NOTE: Conduct a check on learning and summarize the learning activity.

CHECK ON LEARNING: Conduct a check on learning and summarize the ELO.

SECTION IV.   **SUMMARY**

> Method of Instruction: Conference / Discussion
> Instructor to Student Ratio is: 1:16
> Time of Instruction: 0 hrs
> Media: Small Group Instruction (SGI)

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review / Summarize Lesson

You have completed your training on Common Hardware Systems (CHS-2) terms and components. CHS-2 is an important system in the Army's battlefield command network. As a 31U NCO you will be required to install, perform ULM and troubleshoot CHS-2 systems.

SECTION V.   **STUDENT EVALUATION**

Testing Requirements	**NOTE:** Describe how the student must demonstrate accomplishment of the TLO. Refer student to the Student Evaluation Plan.

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Feedback Requirements	**NOTE:** Feedback is essential to effective learning. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. Provide remedial training as needed.

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Appendix A - Viewgraph Masters (N/A)

Appendix B - Test(s) and Test Solution(s) (N/A)

Appendix C - Practical Exercises and Solutions (N/A)

Appendix D - Student Handouts (N/A)